mode, a mail mode, and a transmission display mode. The telephone mode includes an operation of phoning someone. The button icon **29***a* or the like includes a character input item for selection of the telephone mode. After another processing mode is executed, the procedure goes to a step G**12**.

[0185] In the step G**12**, the CPU **32** decides whether to terminate the processing or not. For example, the CPU **32** detects power source OFF information to terminate the information processing. When the power source OFF information is not detected, the procedure goes back to the step G**2**, and an icon image, such as a menu, is displayed and the above-mentioned processing is repeated.

[0186] The mobile phone **400** having a haptic input function, provided with the input device **90**, according to the fourth embodiment has the touch panel supporting vibrator **300** of the present invention, and can give a haptic stimulus in response to the input operation to the finger **30***a* of the operator from the rigid upper housing **20** having fixed the display means **29** and the touch panel **24**.

[0187] Therefore, when the piezoelectric actuators **25***a*, **25***b* are vibrated, irrespective of the position of the upper housing **20** being used, high reliability with respect to the vibration transmission can be surely achieved. Not only in the mobile phone **400** but also particularly in an electronic device to which external force of vibration, impact, or the like is highly possibly exerted, such as another mobile device or a car device, the function of applying the vibration generated by the piezoelectric actuators **25***a*, **25**B in the upper housing **29** or the like can be exhibited.

[0188] The present invention is advantageously applied to an information processing device, mobile phone, personal digital assistant, or the like which gives a haptic stimulus to an operating body when selecting an icon on the input display screen and inputting information.

[0189] The substrate supporting vibration structure according to the embodiment of the present invention has the piezoelectric element formed at a predetermined position between the first substrate and the second substrate or at a predetermined position of the long strip-form portion of the spacer member. The vibration supporting portion and vibration applying portion of the piezoelectric element are disposed in the thicknesswise direction of the first and second substrates stacked.

[0190] With this structure, it is possible to provide a vibration housing having fixed the first substrate and the second substrate and having rigidity that reduces a dimensional change caused due to bending stresses or torsion stresses. Therefore, when the piezoelectric element is vibrated, irrespective of the position of the vibration housing being used, high reliability with respect to the vibration transmission can be surely achieved.

[0191] The input device having a haptic function according to the embodiment of the present invention includes the substrate supporting vibration structure of the present invention, and can give a haptic stimulus to an operating body in response to the input operation from the rigid vibration housing having fixed the input detector means and the display means.

[0192] With this structure, when the piezoelectric element is vibrated, irrespective of the position of the vibration housing being used, high reliability with respect to the vibration transmission can be surely achieved. In particular, vibration caused by the piezoelectric element in the substrate supporting vibration structure can be applied to electronic devices, such as mobile devices or in-vehicle devices, which highly possibly receive vibration or impact as external force.

[0193] It should be understood that various changes and modifications to the presently preferred embodiments described herein will be apparent to those skilled in the art. Such changes and modifications can be made without departing from the spirit and scope of the present subject matter and without diminishing its intended advantages. It is therefore intended that such changes and modifications be covered by the appended claims.

The invention is claimed as follows:

1. A substrate supporting vibration structure which is a vibration structure for supporting a substrate, comprising:
- a spacer member, fixed between a first substrate and a second substrate, having at least one form selected from a pillar form and a long strip form; and
- a piezoelectric element, formed at a predetermined position between the first substrate and the second substrate or at a predetermined position of the long strip-form portion of the spacer member, having a vibration supporting portion and a vibration applying portion,
- wherein the vibration supporting portion and vibration applying portion of the piezoelectric element are disposed in the thicknesswise direction of the first and second substrates stacked.

2. The substrate supporting vibration structure according to claim **1**, wherein:
- the spacer member having a long strip form has formed therein a part fitting site having an internal hollow form,
- the vibration supporting portion is joined to a bottom of the part fitting site, and
- the vibration applying portion is joined to a top of the part fitting site.

3. The substrate supporting vibration structure according to claim **1**, wherein:
- the spacer member having a long strip form has formed therein a part fitting site having a top-open form,
- the vibration supporting portion is joined to the part fitting site, and
- the vibration applying portion is joined to the second substrate.

4. The substrate supporting vibration structure according to claim **1**, wherein:
- the piezoelectric element has a long strip form,
- the piezoelectric element has vibration supporting portions on the respective sides of the long strip-form portion and one vibration applying portion at the middle of the long strip-form portion,
- the vibration supporting portions are joined to the first or second substrate, and
- the vibration applying portion is joined to the second or first substrate.

5. The substrate supporting vibration structure according to claim **1**, wherein the piezoelectric element is a bimorph-type piezoelectric actuator.

6. An input device having a haptic function for giving a haptic stimulus to an operating body during an information input operation, the input device comprising:
- input detector means;
- display means formed under the input detector means; and
- a substrate supporting vibration structure for giving a haptic stimulus to the operating body in response to the input operation for the input detector means, wherein: